1. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$5 + 6x < \frac{36x + 4}{4} \leq 4 + 8x$$

A. $(-\infty, a) \cup [b, \infty)$, where $a \in [-4.5, 0.75]$ and $b \in [-5.25, 2.25]$

B. $(-\infty, a] \cup (b, \infty)$, where $a \in [-2.55, 0.38]$ and $b \in [-6.75, -1.5]$

C. $[a, b)$, where $a \in [-1.72, -0.22]$ and $b \in [-5.25, 2.25]$

D. $(a, b]$, where $a \in [-4.5, -0.75]$ and $b \in [-7.5, 0]$

E. None of the above.

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2. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$\frac{-5}{4} - \frac{7}{8}x \leq \frac{-4}{5}x + \frac{8}{3}$$

A. $(-\infty, a]$, where $a \in [51.75, 54.75]$

B. $[a, \infty)$, where $a \in [51, 53.25]$

C. $[a, \infty)$, where $a \in [-54.75, -51.75]$

D. $(-\infty, a]$, where $a \in [-54, -46.5]$

E. None of the above.

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3. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$-10x + 8 > 6x - 5$$

A. (a, ∞), where $a \in [-0.3, 1.8]$

B. (a, ∞), where $a \in [-1.8, -0.1]$

C. $(-\infty, a)$, where $a \in [-0.4, 2.4]$

D. $(-\infty, a)$, where $a \in [-1.5, 0.2]$

E. None of the above.

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4. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$-10x + 4 \leq 7x + 7$$

A. $(-\infty, a]$, where $a \in [-0.27, -0.05]$

B. $[a, \infty)$, where $a \in [-0.38, -0]$

C. $[a, \infty)$, where $a \in [0.03, 0.36]$

D. $(-\infty, a]$, where $a \in [-0.06, 0.27]$

E. None of the above.

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5. Using an interval or intervals, describe all the x-values within or including a distance of the given values.

No more than 5 units from the number -10.

A. $(-15, -5)$

B. $(-\infty, -15) \cup (-5, \infty)$

C. $[-15, -5]$

D. $(-\infty, -15] \cup [-5, \infty)$

E. None of the above

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6. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$-4 - 3x < \frac{-22x + 6}{9} \leq -7 - 5x$$

A. $(-\infty, a] \cup (b, \infty)$, where $a \in [6, 13.5]$ and $b \in [-1.5, 6]$

B. $[a, b)$, where $a \in [3, 9.75]$ and $b \in [2.25, 5.25]$

C. $(a, b]$, where $a \in [3.75, 9.75]$ and $b \in [-0.75, 5.25]$

D. $(-\infty, a) \cup [b, \infty)$, where $a \in [6.75, 13.5]$ and $b \in [2.25, 6]$

E. None of the above.

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7. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$-3 + 4x > 7x \text{ or } 5 + 9x < 10x$$

A. $(-\infty, a] \cup [b, \infty)$, where $a \in [-2.25, 1.5]$ and $b \in [4.5, 6.75]$

B. $(-\infty, a) \cup (b, \infty)$, where $a \in [-7.95, -3.23]$ and $b \in [-0.75, 4.5]$

C. $(-\infty, a] \cup [b, \infty)$, where $a \in [-8.25, -3]$ and $b \in [-1.5, 3]$

D. $(-\infty, a) \cup (b, \infty)$, where $a \in [-1.43, 1.43]$ and $b \in [3, 10.5]$

E. $(-\infty, \infty)$

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8. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$5 + 4x > 7x \text{ or } 7 + 4x < 5x$$

A. $(-\infty, a] \cup [b, \infty)$, where $a \in [-2.25, 6]$ and $b \in [4.5, 9.75]$

B. $(-\infty, a] \cup [b, \infty)$, where $a \in [-10.5, -6]$ and $b \in [-4.5, 0]$

C. $(-\infty, a) \cup (b, \infty)$, where $a \in [-9.75, -3]$ and $b \in [-5.25, -1.5]$

D. $(-\infty, a) \cup (b, \infty)$, where $a \in [0.75, 4.5]$ and $b \in [3, 10.5]$

E. $(-\infty, \infty)$

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9. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$\frac{8}{2} - \frac{10}{3}x > \frac{5}{6}x - \frac{9}{5}$$

A. $(-\infty, a)$, where $a \in [-0.75, 3.75]$

B. $(-\infty, a)$, where $a \in [-6.75, 0]$

C. (a, ∞), where $a \in [0, 3.75]$

D. (a, ∞), where $a \in [-2.25, 0]$

E. None of the above.

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10. Using an interval or intervals, describe all the x-values within or including a distance of the given values.

Less than 9 units from the number 6.

A. $(-\infty, -3) \cup (15, \infty)$

B. $[-3, 15]$

C. $(-\infty, -3] \cup [15, \infty)$

D. $(-3, 15)$

E. None of the above
